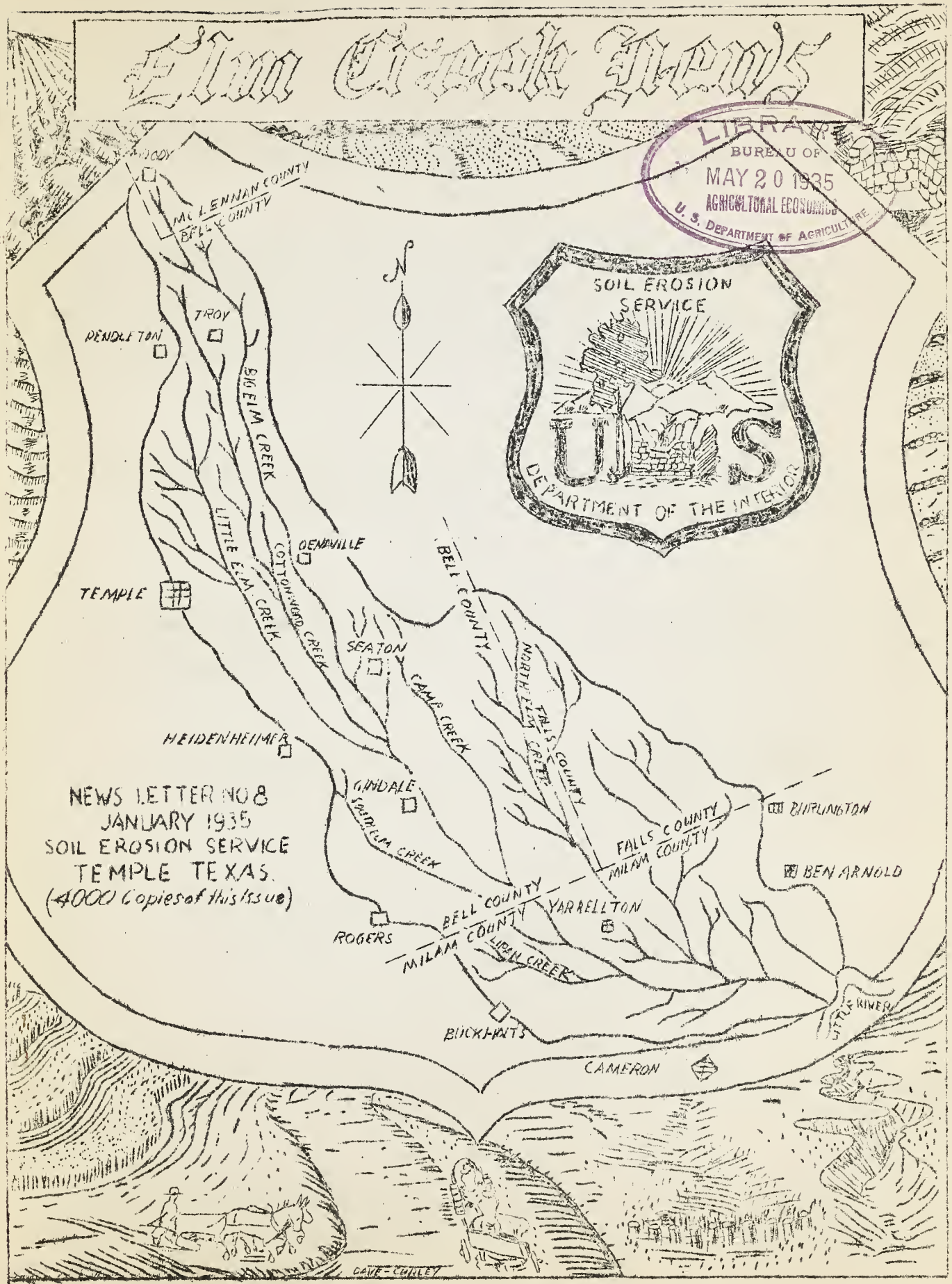
Elm Creek News



SOIL EROSION SERVICE
U.S.
DEPARTMENT OF THE INTERIOR

NEWS LETTER NO 8
JANUARY 1935
SOIL EROSION SERVICE
TEMPLE TEXAS.
(4000 Copies of this issue)

TO OUR COOPERATORS

All farmers in the Elm Creek Watershed who want terrace lines run this fall are asked to immediately get in touch with the Soil Erosion Service.

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If your terrace lines have been run and you do not have time to construct the terraces before other farm work interferes, we suggest running your rows parallel to the lines and leaving a 30 foot strip for the terrace. These strips may be planted to cane or sudan and when the crop is harvested next summer the terraces may be built even though corn or cotton is on the land between the strips. The Soil Erosion Service will furnish Sudan seed to farmers to plant in these strips.

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All cooperators are urged to complete the construction of terraces on their farms as soon as possible. There is no assurance that the Government will help farmers construct terraces after June 15th, 1935.

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The Soil Erosion Service has 28,000 pounds of Sudan seed to furnish to farmers in the Elm Creek Watershed. This seed may be planted as a part of a strip cropping program, on terraces, or on strips to be terraced. Farmers are asked to make their requests for the seed at the Soil Erosion Service Office.

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Farmers who received Austrian Winter Peas, Vetch and Hubam Clover are asked to keep a record of the date of planting, date of good stand, and, in case of the Winter Peas when planted in rows, the date and number of cultivations.

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If difficulty is experienced in keeping rows on contour with the terrace when changing the row system, as we are sure you will in some cases, please notify the Soil Erosion Service and we will be glad to help you.

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Now is a good time for all cooperators who have received fencing material for their permanent pastures to put their fences up. The Soil Erosion Service is delivering fencing material to those who have not yet received it as soon as possible.

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All farmers wishing contour furrow lines or terrace lines run on pastures should notify the Soil Erosion Service immediately.

FARMERS MUST RECEIVE CASH INCOME FROM COTTON BUT AT SAME TIME SLASH PRODUCTION

Farmers of the south are confronted with the problem of reducing cotton acreage to keep production in line with consumption, and at the same time continue to receive most of their cash income from cotton.

In the early days of Texas, great herds of "mavericks" or low grade steers roamed the ranch lands, and a steer was just another steer, very little regard being paid to quality. The day has come in Texas, however, when every ranchman and farmer can and is recognizing quality in beef, and they are receiving a premium for quality beef over low grade beef. Looking back over time we can see the transition in production methods in all forms of livestock, poultry, and feeds. Every farmer, large or small, is able to determine the quality of these products, and he is receiving his premium as a result. This is not so with cotton. Ordinarily cotton is just cotton and is sold at hog-round prices just as steers were in the early days.

Following is a quotation from an article by E.B. Reynolds and D.T. Killough which was printed in the November, 1933, issue of the "Journal of the American Society of Agronomy":--"The spinning value of cotton lint is influenced by its length, strength, and character or body. The length of fibre is of special importance, since this property determines to a large extent the kind of fabric that can be made from it. The importance of the length of fibre, or lint, is reflected in the price paid for different lengths of lint on the cotton exchange throughout the world.

"The length of lint, although a varietal characteristic, is influenced by environmental conditions, especially the amount of moisture in the soil during the period the lint is developing. It is thought that the fertility of the soil also influences the length of lint, but so far as the writers are aware no definite data on the effect of fertilizers on the length of lint have been reported."

As stated above, the length of cotton lint grown depends upon the variety as well as the moisture conditions. Most farmers have realized the value of growing good varieties, but their main idea in selecting those varieties has been to increase yield per acre without special consideration for fibre length and character or body; however, the tendency at present is toward varieties that have high acre yield combined with longer than average lint. Considering that the present trend is toward planting better seed, the next move to be made by the farmer is to conserve moisture and learn to determine the quality of the cotton produced. The ability to determine quality in cotton will enable the farmer to intelligently market his cotton, and demand the price of the quality that he produces just as he is able to do when he sells a fat hog or steer.

The cotton growers of the United States are in a better condition to improve their quality and staple length and to receive more money from reduced acreage than are the growers in the foreign countries who are reported to be responsible for a large part of the world's surplus cotton. This is true because the American growers are established in the business; most of the American cotton is grown by comparatively small farmers who can give their individual attention to the production of a higher quality cotton. Most of the increase in

production in foreign countries is on large farms worked by hired labor, making it impossible to give individual attention to quality production. Also the present quality of American cotton is recognized by foreign buyers and as the quality is improved the demand for American cotton will increase regardless of existing trade barriers that seem to choke our foreign sales.

The Soil Erosion Service is conducting a study to try to determine the exact effect of erosion control measures on the lint produced on erosion protected farms. The S.E.S. is assisted in this study by the U.S.D.A. division of cotton marketing which is classing the cotton for them. The U.S.D.A. has also offered the farmers of central Texas a cotton classing school in an attempt to familiarize them with the important points used in determining the quality of their cotton with the hope that in the future farmers will attempt to learn to recognize the quality and value of the cotton they produce just as they are able to recognize the quality of other products of their farms.

At the present time appropriations for the U.S.D.A., division of cotton marketing, is sufficient only to give classification on about 10 per cent of the cotton produced.

A bill was presented in the closing days of the last Congress by Congressman J.P. Buchanan to gradually increase the appropriation so that eventually classification can be given on all cotton produced in the United States. The bill likely will be presented again during the present session of Congress. Farmers of Bell County are backing the bill.

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The soil erosion control practices being carried out on this project to demonstrate and determine the best methods of erosion control for the Texas Blacklands have lately drawn erosion and conservation specialists and other distinguished visitors from all points of the compass. Among these have been:

Mr. A.M. Vance	State Reclamation Engineer and Vice Chairman, Texas Planning Board	Austin, Texas.
Mr. L.P. Merrill	Regional Director, Soil Erosion Service	Lindale, Texas.
Hon. Tom Connally	U.S. Senator from Texas	Marlin, Texas.
R. Maclagon Gorrie, Esq.,	British Forest Conservation Serv.,	Lahore, Punjab, India.

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SOILS

General Terms

Surface Soil A1

The upper horizon or surface layer of the soil mass. The horizons above Horizon A2 usually include that portion that is modified by plowing and other tillage operations.

Subsurface Soil A2

The horizon or layer of soil directly beneath the surface soil. The A horizons below Horizon A1, used to include the portion of the uniform material below the tilled depth.

Subsoil

The horizons or layers of soil beneath the surface soils. The B Horizons.

Substratum

The horizons or layers of material below the solum or true soil mass. The C Horizons.

In most cases the substratum is the deeper, unweathered parent material. In some soils, it may be materials quite distinct in character from that which weathered to form the overlying soil mass.

Soil Type

A soil which throughout the full extent of its occurrence has relatively uniform texture of the surface soil and relatively uniform profile characteristics. The unit of soil mapping.

The name of the soil type is a combination of series name and the textural grade designation, as, for example - Orangeburg sandy loam.

Phase

A subdivision of the Soil Type covering departures from the typical soil characteristics, insufficient to justify the establishment of a new type, yet worthy of recognition.

Soil Series

A group of soils having the same character or profile - (the same general range in color, structure, consistence, and sequence of horizons) the same general conditions of relief and drainage and usually a common or similar origin and mode of formation. A group of soil types closely similar in all respects except the texture of the surface soils.

While the soil type is the unit of soil mapping, the series is the most important in soil classification as it expresses in full the profile differences.

Soil Family

A group of soil series that are progressing toward a common or closely similar final mature profile condition.

Soil Province

A grouping of Soil Series and Families based on broad general resemblances in profile characteristics.

The Province grouping now in use is based on similarities in mode of formation.

Soil Texture

Texture is a term indicating the coarseness or fineness of the soil; the amount or quantity of each of the grain-size group of particles that constitute the soil.

Colloidal Soils

Soils in which particles exhibiting colloidal characteristics are present in sufficient amount to have an appreciable effect on the soil character.

Soil Porosity

Porosity is a term indicating the mass effect of the pores or voids between the individual particles and aggregates that make up the soil.

Soil Structure

Structure is a term expressing the arrangement of the individual grains and aggregates that make up the soil mass.

The structure may refer to the natural arrangement of the soil when in place and undisturbed or to the soil at any degree of disturbance. The terms used indicate the character of the arrangement, the general shape and the size of the aggregates and in some cases may indicate the consistence of these aggregates.

Calcareous Soil

A soil containing sufficient calcium carbonate to effervesce when tested with weak (0.1N) hydrochloric acid

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35,000,000 acres of once-fertile land has been destroyed by erosion in the United States alone. Another 125,000,000 acres has been shorn of its productive surface soil and seriously impoverished. The annual soil loss from this country is 3,000,000,000 tons, or the economic equivalent of 10,000 good farms of 150 acres each.

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POSSIBLE USES OF STRIP-CROPPING

Cultivation of the inherently fertile Blackland region of Texas was started some 50 to 60 years ago. From this time, when the plowman converted the native sod into fields supporting cultivated crops of cotton and corn, the processes of soil erosion have gone on at an increasingly rapid rate. As though to help along and accelerate soil erosion, the general practice has been to run rows of cultivated crops up and down slopes. General observations indicate that 80 to 90 percent of our cultivated crops are laid out in this manner. In the past, when such a practice received merited criticism, the usual reply was "Every row carries its own water", the implication being that rainwater flowing down the slopes was more evenly distributed over the surface of fields, thus preventing concentration at one point, where harmful soil erosion might result. The fallacy in this argument is that no account is taken of the large quantities of soil which are carried down the "middles" to our creeks, rivers, and eventually to the Gulf. Experiments conducted at the Blackland Experiment Station, South of Temple, under the direction of Mr. E.B. Deeter, in charge of the erosion work for the U.S. Department of Agriculture, has revealed the seriousness of the problem. During a four year period it has been found that soil losses have been as high as 65 tons per acre, where corn rows run up and down a 4% slope. An even more startling result was observed during the past November when the total rainfall was over 8 inches. On a slope ranging from 4 to 6%, with land bedded to cotton rows up and down the slope, a soil loss of 17 tons per acre was sustained in the one month. It should be borne in mind that the soil losses referred to were computed on a dry basis, the weight of water in the soil not being included. The weight of the wet mud would be approximately twice as much as the figures given above. During 1934 the total soil loss on this same area attained the astounding total of 53½ tons per acre.

In another field, having the same slope of 4 to 6%, the land is strip-cropped to cotton and oats. Alternating strips of cotton and oats, four in number, are planted on the contours. Due to the abnormally dry fall, oats were not planted until late, so that when the heavy November rains occurred, the crop was only about an inch in height. In spite of this disadvantage the soil loss for November was 3.8 tons per acre as compared with the 17 tons per acre loss where the cotton rows were up and down the slope. For the entire year of 1934 the soil loss was 9.6 tons per acre for strip-cropping as against 53½ tons per acre for cotton rows up and down the slope.

Present knowledge indicates that terracing combined with strip-cropping constitutes the most effective way in which soil erosion may be controlled. When the control of soil erosion is mentioned to the average person, the first remedy that usually suggests itself is terracing. However, in spite of the fact that a recent national awakening to the menace of soil erosion has resulted in an expansion of the agencies that are now engaged in terracing, it will take many years to accomplish anything near the desired amount of erosion control that may be deemed necessary to protect our sloping lands. Soil erosion has already resulted in such widespread decreased soil fertility that we cannot afford to let the years slip by without some measures of control being taken. The practice of strip-cropping is recommended either as a means of control until it is found convenient to terrace, or it may be retained permanently on our more

gently sloping lands, or combined with terracing on the steeper slopes.

North of Troy, a strip-cropped farm was inspected after the recent heavy November rains. The fields had stood this very severe test with exceedingly favorable results. While oats, sudan, and the grain sorghums are crops adapted to strip-cropping, it is believed that oats is an unusually valuable crop for this region, because of the fact that the soil is protected during the time when the largest amount of rainfall is incurred.

With strip-cropping it is not necessary to have point rows, although it can be said that point rows are being handled in terraced fields, at the Blackland Experiment Station, in a satisfactory manner. A suggestion is offerred on the advisability of running a few back-furrows along contour lines intended for use in strip-cropping. The outlines of such contour markers can be used for several years.

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APPOINTMENTS RECEIVED

The Soil Erosion Service is pleased to announce the appointment of the following men to its staff:

Mr. R.L. Hensel was appointed Range Agent for the Elm Creek Watershed. Mr. Hensel, long associated with forestry and pasture work, served from 1913 to 1919 with the U.S. Forestry Service. He was associated for several years with the Kansas Experiment Station at Manhattan, Kansas, and with the Kansas State Agricultural College. For the past few years he has been connected with the Texas A.&M. College in various capacities. Mr. Hensel in his capacity as Range Agent of the Agronomy Department will devote his time to the revegetating of eroded areas taken out of cultivation and other grass problems.

Mr. M.A. Hartman was appointed as Junior Agricultural Engineer. He holds a Master's Degree in Agricultural Engineering from Texas A.&M. College. He was associated for some time with the Texas Agricultural Experiment Station at College Station, Texas, and was then employed as Technical Foreman of the E.C.W. Camp at Taylor, Texas. Mr. Hartman has under his supervision the preparation of terrace outlets and terrace outlet ditches for sodding, and the building of temporary control structures.

Mr. Geo. E. Byars, appointed as Agricultural Engineer, is a graduate of Texas A.&M. College, having completed his course in Civil Engineering there. He will do general engineering work in connection with the construction of permanent control structures being built by the two E.C.W. Camps, S.E.S. T-1, at Temple, and S.E.S. T-2 at Troy.

Mr. Robert C. Moore was appointed as Junior Agricultural Aide. He attended Texas A.&M. and Oklahoma Univ. for three years, and prior to his connection with the Soil Erosion Service was employed by the Texas Highway Department as Civil Engineer. He will assist in keeping accurate records of work done on each farm, including complete records on terracing, actual feet of terrace lines run, construction, terrace outlets, gully control, seeding and sodding, fencing, contour furrowing, strip-cropping, etc. His technical knowledge of field operations especially fits him for his present position.

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PROGRESS REPORT AS OF DECEMBER 31, 1934.

1. 1,918,752 feet of terrace lines were run during the month of December. Total feet of terrace lines run up to December 31, 11,091,342.

2. 362,607 feet of terraces were constructed during the month of December. Total feet of terraces constructed up to December 31, 4,024,962.

3. 219 permanent or temporary dams and spillways were constructed during the month of December for gully control and terrace outlet protection. 2,090 dams of all types have been built to December 31.

4. Of the 310 farm surveys completed, 201 or 65% are project cooperators. Complete farm records are to be kept during 1935 by 150 farmers, 75% of whom are cooperators.

5. 18 terrace outlets were sodded or seeded during December.

6. Soil erosion control practices have either been completed or are in the process of completion on 446 farms.

7. 3 ditches were sodded during the month of December.

8. On 445 farms which are under cooperative agreement, comprising 56,165 acres, terrace lines have been run or constructed on 48,397 acres.

9. 200 government-owned terracing graders,
90 government-owned fresnoes,
10 farmer-owned terracing graders, and
11 large type road graders, not farmer owned, are being used in the construction of terraces. 62 mules, not farmer-owned, are being used to make the terrace fills.

10. 95% of farmers contacted have agreed to carry out a definite crop plan for the year 1935, and 80% have agreed for the years 1935, 1936, 1937 and 1938.

11. 699 acres of eroded land have been retired from cultivation and converted into permanent pasture.

12. Farmers have agreed to contour furrow 955 acres of pasture land, and 391 acres have been contoured. 127 acres of pasture have been terraced.

13. 24,303 acres were mapped during the month of December, showing soil types, degree of erosion and slop of land.

14. An educational Soil Erosion display was placed in a down town building in Temple. This display, which includes pictures and models of the work of erosion and the various practices of preventing erosion, was the source of much favorable comment from Temple citizens and farmers of the watershed.

RAINFALL FOR DECEMBER, 1934.
BIG ELM AREA
U.S. GEOLOGICAL SURVEY

Station No.	at or near	rainfall in inches
11	Stringtown	0.0
12	Heidenheimer	0.0
13	Oscar	1.97
14	Doublcheader	0.0
15	N.E. Temple	.6
16	S. of Troy	.13
17	Pendleton	0.0
18	E. of Moody	0.0
19	Shiloh Church	.94
20	Bottoms Store	1.42
21	Cenaville	2.26
22	Theo Church	1.86
23	Bean Hill	1.83
24	Seaton	1.76
25	Airville	1.68
26	Cyclone	2.34
27	S.W. Meeks	2.77
	NORTH ELM AREA	
40	Yarrellton	3.03
43	Barclay	2.26
44	Terry Chapel	3.14
45	Burlington	2.47
46	S.E. Meeks	3.47
47	Westphalia	1.78

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Due to the fact that the greater number of farmers are now preparing their land for this year's crop, and in order to aid them in their erosion control program, those desiring lines run may have them run immediately. Feed may be planted along the terrace lines and the terraces built in the summer.

EROSION CONTROL WORK IS NEVER FINISHED

Let us not fool ourselves by thinking that when we have once terraced, strip-cropped, or contoured our rows we have controlled erosion for all time. Such a belief is far from being true. Erosion control work is never finished, but is continued with each planting season. When we lay off our rows on the contour we conserve moisture and help prevent erosion. Each strip of thick-rooted feed or grain crop that is planted on the contours helps to prevent soil losses. Each farming operation helps to control erosion if it is done correctly with thought to conserving the soil.

Terraces, structures or any man-made efforts are generally very short-lived unless they receive careful maintenance and attention. Terraces that are plowed across soon become ineffective and a terracing system that is destroyed generally does more damage than no terraces.

Terrace maintenance is easily accomplished with very little attention and work. The care of permanent structures is equally as easy. Without this small amount of attention any erosion control system is eventually doomed to failure.

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Since our receipt of new equipment it is now possible to correct and make some very necessary changes in the mailing list for this monthly news letter. It is our desire that every farmer in the Watershed receive a copy, both owners and tenants, and also owners of land in the Watershed who do not themselves live within its boundaries. If you know of anyone living in the Watershed or owning land therein who does not receive a copy of this news letter, you will oblige us by sending in his name and address. Also notify us of changes in address. The news letter is published for your benefit. Use it.

UNITED STATES
DEPARTMENT OF THE INTERIOR
SOIL EROSION SERVICE
OFFICE OF THE REGIONAL DIRECTOR
TEMPLE, TEXAS.

OFFICIAL BUSINESS

SOIL EROSION SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR
ELM CREEK WATERSHED--CENTRAL TEXAS
NEWS LETTER----------NO. 8
TEMPLE, TEXAS. JANUARY, 1935.